We claim:

1. A method for detecting containers, e.g., bottles of glass or plastic, or cans made of metal, wood, glass or plastic which for the recycling of materials or reuse of the container, are transported in a lying position and with their axis parallel to the direction of transport past a detection zone associated with a detector station containing a video camera, a video image analysis of the container being carried out, characterised by:

a) - analysing a sequence of video images of the container whilst it is conveyed past the video camera,

b) - determining the position and movement of the container in a viewing region of the video camera on the basis of continuous detection of the position and movement of the container in the video image, and

c) - determining the most suitable video image for recognition and identification of the container.

2. A method as disclosed in claim 1, characterised in the further step of calculating on the basis of the video picture of the container a characteristic expression of the shape of the container, e.g., contour, surface area in the video image, cross-section.

3. A method as disclosed in claim 1, characterised by producing a colour video image of a container which is a bottle of plastic or glass, and determining the colour of the container in the video image based on the bottle's light transmissivity for light which is emitted in a cluster of wave lengths.

4. A method as disclosed in claim 1, characterised by continuously scanning a field of the video image of the container to search for and register a bar code located on the container.

5. A method as disclosed in claim 1, characterised by observing any longitudinal markings in the video image of a container which is a bottle, emitting a signal indicating that the container wholly or partly contains liquid or another substance, and possibly returning the container to the user for emptying prior to reinsertion.

6. A method as disclosed in claim 5, characterised in that in addition the container is weighed and a capacitance measurement is carried out.

7. A method as disclosed in claim 1 or 5, characterised in that in addition it is analysed whether the container is of a specific metal type

8. A device for detecting containers, e.g., bottles of glass or plastic, or cans made of metal, wood, glass or plastic which for the recycling of materials or reuse of the container, are transported in a lying position and with their axis parallel to the direction of transport past a detection zone associated with a detector station containing a video camera, a video image analysis of the container being carried out, characterised in that

a) - the video image analyser is connected to the video camera in order to analyse a sequence of video images whilst the container is conveyed past the video camera, the video analyser having means for performing:

b) - continuous determination of the position and movement of the container in a viewing region of the video camera on the basis of the video image, and

c) - determination of the best video image for the container recognition and identification.

9. A device as disclosed in claim 8, characterised in that in the analyser there is also included container shape calculation means which on the basis of the video image of the container is adapted to calculate a characteristic expression of the shape of the container, such as its contour, surface area in the video image, cross-section.

10. A device as disclosed in claim 8 or 9, characterised in that the video camera is a colour video camera, that the container is a bottle of glass or plastic, that a lighting unit is provided to illuminate the container, and that the analyser contains colour determination means for establishing the colour of the container in the video image based on the light transmissivity of the container to light which is emitted in a cluster of wave-lengths when the container is a bottle of glass or plastic.

11. A device as disclosed in claim 8 or 9, characterised in that the analyser contains a bar code reader which is adapted to scan continuously a field of a video image in order to search for and register a bar code located on the container.

12. A device as disclosed in claim 8, characterised in that the analyser contains signal emission means which is adapted so that when it observes any longitudinal markings in the video image of a container which is a bottle it will emit a signal indicating that the bottle, wholly or partly, contains liquid or another substance.

13. A device as disclosed in claim 12, characterised in that said signal emission means is adapted to interact with a load cell to weigh the container and a meter for measuring a capacitance value of the container.

14. A device as disclosed in claim 8 or 12 or 13, characterised in that in connection with the detector station there is provided a metal detector.

15. A device as disclosed in claim 9, characterised in that the analyser contains a bar code reader which is adapted to scan continuously a field of a video image in order to search for and register a bar code located on the container.